UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,475	10/23/2001	Yang Cao	SYCS-060/P105	6764

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EXAMINER
DAVIS, CYNTHIA L

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/004,475	CAO, YANG
	Examiner	Art Unit	
	Cynthia L. Davis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 October 2005*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1, 16, and 21 have been considered

but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

2.   Claims 1-4, 12, 14-22, and 24 rejected under 35 U.S.C. 103(a) as being

unpatentable over Doverspike in view of Chaudhuri.

Regarding claim 1, defining a set of attributes for said links, calculating a backup

path for each working path between a first node and a second node in said network,

wherein said backup path is SRLG-disjoint from said working path; activating a backup

path for a working path in response to a fault along said working path; disseminating

fault information to said nodes in said optical network is disclosed in Doverspike,

paragraph 6, and paragraph 16 (disclosing use of SLRG-disjoint restoration paths).

After the recovery of the fault, releasing the links on the backup path and adjusting said

attributes for the released along said backup path is missing from Doverspike.

However, Chaudhuri discloses in column 13, line 63-column 14, line 5, releasing the

restoration links upon recovery and returning all channels to the normal state, which

would involve adjusting the attributes of the released channels back to the normal state.

It would have been obvious to one skilled in the art at the time of the invention to use

the release method of Chaudhuri in the system of Doverspike. The motivation would be

to afford rapid restoration to the normal state (Chaudhuri, column 14, lines 4-5 and 28-29).

Regarding claim 2, said attributes include attributes which will be disseminated globally to all said nodes in the network is disclosed in paragraph 6 (the information used to select the restoration path is advantageously distributed among nodes in the network).

Regarding claim 3, another set of attributes which will be kept locally by one of the end points of said link is disclosed in paragraph 6 (the nodes in the service path are responsible for locally maintaining link information).

Regarding claim 4, said step of disseminating fault information is via OSPF is disclosed in paragraph 20.

Regarding claim. 12, the set of attributes includes a resource reservation table wherein each entry further including a resource ID and paths reserving said resource is disclosed in paragraphs 25 and 27.

Regarding claim 14, the resource ID is wavelength ID is disclosed in paragraph 6 (reservation is made of wavelengths).

Regarding claim 15, the paths include both working path and backup path is disclosed in paragraphs 26 (service path) and 27 (restoration).

Regarding claim 16, identifying a first node and a second node in response to a request for establishing a path with a required bandwidth between said first and said second node; finding a first set of links by deleting from the interconnection graph links with a first of said attributes less than said required bandwidth; finding a first optimal

path between said first and second node from said first set of links; finding a second set

of links by further deleting from the interconnection graph the links sharing a second of

said attributes with any one of the links along said first optimal path; assigning a value

to said second set of links; finding a second optimal path between said first and said

second node from said second set of links based on said assigned value; and activating

the second optimal path on a fault in the network is disclosed in Doverspike, paragraph

6, and paragraph 16 (disclosing use of SLRG-disjoint restoration paths). After the

recovery of the fault, releasing links on the second optimal path and adjusting said first

and second attributes for each released along said backup path is missing from

Doverspike. However, Chaudhuri discloses in column 13, line 63-column 14, line 5,

releasing the restoration links upon recovery and returning all channels to the normal

state, which would involve adjusting the attributes of the released channels back to the

normal state. It would have been obvious to one skilled in the art at the time of the

invention to use the release method of Chaudhuri in the system of Doverspike. The

motivation would be to afford rapid restoration to the normal state (Chaudhuri, column

14, lines 4-5 and 28-29).

Regarding claim 17, said first optimal path is the working path is disclosed in

paragraph 26 (service path).

Regarding claim 18, said first optimal path is the backup path is disclosed in

paragraph 27 (restoration path).

Regarding claim 19, said first attribute is residual bandwidth which is defined as

total bandwidth of a link minus bandwidth allocated for working paths and backup paths

is disclosed in paragraphs 23, 26 and 27 (disclosing storage of the overall network

topology, and bandwidth allocated to working and backup paths).

Regarding claim 20, said second attribute is SRLG is disclosed in paragraph 16.

Regarding claim 21, detecting a fault in a working path; starting restoration

process from tail end OXC of said path, which further includes: identifying reserved

resource, passing fault information to the egress port of said OXC; passing said fault

information to upstream node; configuring said OXC to set up a backup path is

disclosed in paragraphs 6, 14 (an OXC that terminates a path is the master node for

that path; link data is stored in the OXCs), and 18 (pre-computed restoration paths may

be stored at the endpoint nodes of the connection and utilized, upon a network failure,

to reroute the service connection). After the recovery of the fault, releasing links on the

second optimal path and adjusting said first and second attributes for each released

along said backup path is missing from Doverspike. However, Chaudhuri discloses in

column 13, line 63-column 14, line 5, releasing the restoration links upon recovery and

returning all channels to the normal state, which would involve adjusting the attributes of

the released channels back to the normal state. It would have been obvious to one

skilled in the art at the time of the invention to use the release method of Chaudhuri in

the system of Doverspike. The motivation would be to afford rapid restoration to the

normal state (Chaudhuri, column 14, lines 4-5 and 28-29).

Regarding claim 22, said step of detecting the fault is via SONET/SDH signal

failure is disclosed in paragraph 13.

Regarding claim 24, said fault information includes a path ID is disclosed in paragraphs 35 and 38 (service and restoration path information are passed among the nodes).

3.   Claims 5-1 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doverspike in view of Chaudhuri.

Regarding claim 5, said set of attributes further includes a first subset of attributes which will be disseminated in low frequency is not specifically disclosed in Doverspike. However, transmitting information via various wavelengths (which is directly related to frequency) is disclosed in paragraph 6. It would have been obvious to send some information regarding the network via low frequencies. The motivation would be to use whatever wavelengths are available, some of which would be low frequency.

Regarding claim 6, said set of attributes further includes a first subset of attributes which will be disseminated in high frequency is not specifically disclosed in Doverspike. However, transmitting information via various wavelengths (which is directly related to frequency) is disclosed in paragraph 6. It would have been obvious to send some information regarding the network via high frequencies. The motivation would be to use whatever wavelengths are available, some of which would be high frequency.

Regarding claim 7,the subset of attributes includes total bandwidth is disclosed in paragraphs 23-26 (disclosing storage of information related to bandwidth in the network) and the end of paragraph 18.

Regarding claim 8, the subset of attributes includes SRLG- Shared Risk Link

Group which is defined as a set of links sharing a common physical resource is

disclosed in paragraphs 16 and 22.

Regarding claim 9, the subset of attributes includes bandwidth allocated to the

working path is disclosed in paragraph 26.

Regarding claim 10, the subset of attributes includes bandwidth reserved to the

backup path is disclosed in paragraph 27.

Regarding claim 11, the subset of attributes includes weighted SRLG is disclosed

in paragraph 33 and figure 4, element 405, and paragraph 27.

4.   Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Doverspike in view of Chaudhuri in further view of Zouganeli. The resource ID is time

slot ID is missing from Doverspike. However, Zouganeli discloses in column 5, lines 10-

1 1, allocating a time- slot to each path in an optical network. It would have been

obvious to one skilled in the art at the time of the invention to identify a resource by its

time slot ID. The motivation would be to use a TDM system in the optical network.

5.   Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Doverspike in view of Chaudhuri in further view of Shah. Said fault information is

propagated via SONET/SDH overhead bytes is missing from Doverspike. However,

Shah discloses in claim 10, column 8, line 66-column 9, line 5, a method of transmitting

fault information via SONET overhead bytes. It would have been obvious to one skilled

in the art at the time of the invention to propagate the information via overhead bytes.

The motivation would be to use bandwidth that is not being used for anything else to transmit the information.

6.   Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doverspike in view of Chaudhuri in further view of Graves. Said step of passing fault information to the egress pod is via an inter-card communication mechanism is missing from Doverspike. However, Graves discloses in column 19, line 7, an optical switch with an inter-card bus. It would have been obvious to one skilled in the art to have the OXCs communicate via an inter-card communication system. The motivation would be to use high-speed communication means between the switches.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Cynthia L. Davis whose telephone number is (571) 272-

3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

CLD
10/24/2005

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